Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of operating in a network in which a plurality of stations communicate over a shared medium, comprising

providing a physical layer for handling physical communication over the shared medium;

providing a high level layer that receives data from a station and supplies high level data units for transmission over the medium;

providing a MAC layer that receives the high level data units from the high level layer and supplies low level data units to the physical layer;

at the MAC layer, encapsulating content from a plurality of the high level data units into a stream of sub-frames;

dividing the encapsulated ~~content~~ stream into a plurality of pieces with each piece capable of being independently retransmitted; and

supplying low level data units, at least some of the low level data units each containing a plurality of the pieces into which the encapsulated stream was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream.

2. (Currently Amended) The method of claim 1 wherein at least some information common to the encapsulated high level data units is not repeated for each high level data unit encapsulated in ~~a low level data unit~~ the stream.

3. (Original) The method of claim 2 wherein the information common to the encapsulated high level data units comprises destination and source addresses.

4. (Currently Amended) The method of claim 2 wherein the high level data units each comprise a payload, and encapsulating comprises forming ~~a queue~~ the stream comprising the payloads from a succession of high level data units.

5. (Currently Amended) The method of claim 4 wherein the ~~queue~~ stream comprises a succession of sub-frames, each sub-frame comprising a header and a plurality of the payloads.

6. (Original) The method of claim 5 wherein each sub-frame is divided into the plurality of pieces capable of being independently retransmitted.

7. (Original) The method of claim 6 wherein division of a sub-frame into the plurality of pieces comprises dividing the sub-frame into a plurality of sub-blocks, and forming at least some pieces from a plurality of sub-blocks.

8. (Original) The method of claim 7 wherein each piece constitutes a segment that is transmitted as a physical layer block.

9. (Original) The method of claim 1 further comprising parity pieces derived from other pieces and capable of being used at a destination to recover one or more lost pieces at the destination without having to retransmit the lost pieces.

10. (Original) The method of claim 9 wherein each piece is transmitted as a physical layer block, and the parity pieces are also transmitted as parity physical layer blocks.

11. (Original) The method of claim 10 wherein the physical layer blocks are encoded using forward error correction.

12. (Original) The method of claim 1 wherein some of the pieces making up a low level data unit constitute retransmitted pieces that failed to be correctly transmitted in an earlier attempt.

13. (Previously Presented) The method of claim 12 wherein at least some retransmitted pieces are transmitted with greater forward error correction than forward error correction used in the earlier attempt.

14. (Original) The method of claim 5 wherein each sub-frame further comprises a delivery time stamp associated with at least some payloads.

15. (Original) The method of claim 5 wherein clock information characterizing the time setting of a clock in a transmitting station is transmitted to a receiving station within a header of the low level data units, and the clock information is used by the receiving station along with the delivery time stamps to establish the time at which payloads are delivered.

16. (Previously Presented) The method of claim 15 wherein the time at which a payload is delivered is substantially the time specified by the time stamp based on information derived from the clock information.

17. (Original) The method of claim 5 further comprising an integrity check value associated with each sub-frame or with a plurality of sub-frames.

18. (Original) The method of claim 5 wherein each of the plurality of payloads in a sub-frame have identical length.

19. (Original) The method of claim 5 wherein each sub-frame further comprises MAC management information.

20. (Currently Amended) The method of claim 4 wherein the MAC layer has the capability of transmitting data in a plurality of sessions within a regularly-repeated contention free interval, wherein a station to which data is transmitted is identified by a destination address and a station from which data is transmitted is identified by a source address, and wherein the ~~queue~~ stream contains a queue of payloads for the same session, same source address, and same destination address.

21. (Original) The method of claim 5 wherein the MAC layer has the capability of transmitting data in a plurality of sessions within a regularly-repeated contention free interval, wherein a station to which data is transmitted is identified by a destination address and a station from which data is transmitted is identified by a source address, and wherein the queue contains sub-frames for the same session, same source address, and same destination address.

22. (Previously Presented) The method of claim 20 or 21 wherein the MAC layer processes data transmitted in the sessions according to contention-free channel access processing.

23. (Original) The method of claim 22 wherein the sessions are transmitted within time slots of a regularly-repeated contention-free interval.

24. (Previously Presented) The method of claim 20 or 21 wherein a stream identifier is used to associate content of a queue with a particular session.

25. (Original) The method of claim 24 wherein the stream identifier is also used to associate content of a queue with a priority level for contention-based transmission over the medium.

26. (Currently Amended) The method of claim 24 wherein there are a plurality of queues of payloads in the stream, each containing payloads having a unique combination of stream identifier, source address, and destination address.

27. (Currently Amended) The method of claim 26 wherein each queue contains ~~a payload~~ payloads having a unique combination of stream identifier, source address, destination address, and type of high level layer.

28. (Currently Amended) The method of claim 5 wherein the ~~queue~~ stream is divided into a plurality of sub-blocks, wherein a plurality of sub-blocks are grouped to form a segment, with a segment crossing sub-frame boundaries in the ~~queue~~ stream, wherein a segment constitutes one of the pieces.

29. (Original) The method of claim 28 wherein each sub-block is shorter than a sub-frame.

30. (Previously Presented) The method of claim 8 or 28 wherein at least some segments contain a number of sub-blocks corresponding to one or more sub-frames including at least one sub-frame whose associated sub-blocks comprise less than the whole sub-frame.

31. (Original) The method of claim 28 wherein the sub-blocks are of equal length.

32. (Original) The method of claim 28 wherein the sub-blocks have an associated sequential numbering adapted for use at the receiving station for re-establishing the correct sequential order of the sub-blocks.

33. (Original) The method of claim 32 wherein the sub-blocks have a predetermined size, which combined with the associated sequential numbering, eliminates the need for buffer reordering when out of order segments are received.

34. (Original) The method of claim 33 wherein the sub-blocks are of equal size.

35. (Original) The method of claim 8 or 28 further comprising, for at least some of the low level data units, forming the low level data unit from a plurality of segments.

36. (Original) The method of claim 35 wherein each segment in the low level data unit forms the body of a separate block transmitted by the physical layer.

37. (Original) The method of claim 35 wherein individual segments are individually encrypted.

38. (Original) The method of claim 37 wherein encryption information common to a plurality of segments is carried in a header.

39. (Original) The method of claim 38 wherein some encryption information is carried in a header and frame control of the low level data unit and in a header of the block.

40. (Original) The method of claim 37 wherein some encryption information is carried in frame control of the low level data unit and in a header of the block.

41. (Original) The method of claim 36 wherein each block separately undergoes forward error correction, and forward error correction bits for each block are transmitted in the low level data unit.

42. (Original) The method of claim 41 wherein the level of forward error correction used is different for different blocks.

43. (Original) The method of claim 42 wherein the level of forward error correction used provides greater error correction capability for selected blocks that are being retransmitted after failing to be correctly transmitted in an earlier attempt.

44. (Original) The method of claim 36 wherein most of the blocks are identical in length.

45. (Original) The method of claim 44 wherein the initial and final block of a low level data unit can be of a different length than the remaining blocks.

46. (Original) The method of claim 35 wherein information common to the plurality of segments forming the low level data unit is transmitted in a header for the low level data unit.

47. (Original) The method of claim 41 wherein the information common to the plurality of segments is transmitted only in the header.

48. (Original) The method of claim 41 wherein the low level data unit further comprises a frame control field.

49. (Currently Amended) A method of operating in a network in which a plurality of stations communicate over a shared medium, comprising

providing a physical layer for handling physical communication over the shared medium;

providing a high level layer that receives data from a station and supplies high level data units for transmission over the medium;

providing a MAC layer that receives the high level data units from the high level layer and supplies low level data units to the physical layer;

at the MAC layer, forming low level data units by encapsulating content from a plurality of the high level data units into a stream of sub-frames and dividing the encapsulated ~~content~~ stream into a plurality of pieces, with at least some of the low level data units each containing a plurality of the pieces into which the encapsulated stream was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream; and

adaptively escalating the robustness of transmission of at least some of the pieces in each of at least some of the low level data units depending on the frequency of transmission errors.

50. (Original) The method of claim 49 wherein

the method further comprises incorporating forward-error correction information into the transmitted stream of low level data units, and

wherein the step of adaptively escalating comprises adaptively varying the forward-error correction information depending on the frequency of transmission errors.

51. (Original) The method of claim 50 wherein varying the forward-error correction information comprises varying one or both of the amount and type of forward-error correction information.

52. (Original) The method of claim 49 wherein decisions on adaptively escalating are made at a transmitting station.

53. (Previously Presented) The method of claim 49 wherein each of the low level data units contains a plurality of the pieces.

54. (Previously Presented) The method of claim 52 wherein the forward error correction information comprises information associated with the pieces for use at a destination for recovering a piece that is received with errors.

55. (Original) The method of claim 52 wherein the forward error correction information comprises parity pieces derived from other pieces and capable of being used at a destination to recover one or more lost pieces at the destination without having to retransmit the lost pieces.

56. (Original) The method of claim 55 wherein each piece is transmitted as a physical layer block, and the parity pieces are also transmitted as parity physical layer blocks.

57. (Currently Amended) A method of operating in a network in which a plurality of stations communicate over a shared medium, comprising

providing a physical layer for handling physical communication over the shared medium;

providing a high level layer that receives data from a station and supplies high level data units; and

providing a layer that receives the high level data units from the high level layer and supplies low level data units to the physical layer;

wherein supplying the low level data units comprises

encapsulating content from a plurality of the high level data units into a stream of sub-frames,

dividing the encapsulated ~~content~~ stream into a plurality of sub-blocks,

forming a plurality of pieces, with each piece including one or more sub-blocks, to provide pieces capable of being independently retransmitted, and

supplying low level data units, at least some of the low level data units each containing a plurality of the pieces that include the sub-blocks into which the encapsulated content was divided, and at least some of the low level data units containing boundary demarcation information indicating boundaries between the sub-frames in the stream.

58. (Previously Presented) The method of claim 57 wherein a plurality of the plurality of pieces each include a same number of the sub-blocks.

59. (Previously Presented) The method of claim 57 wherein at least one of the plurality of pieces includes one or more sub-blocks and padding.

60. (Previously Presented) The method of claim 59 wherein an amount of padding in a piece is selected based on the number of sub-blocks in the piece and the size of the pieces.

61. (Currently Amended) The method of claim 57 wherein the high level data units each comprise a payload, and encapsulating comprises forming ~~a queue~~ the stream comprising the payloads from a succession of high level data units.

62. (Currently Amended) The method of claim 61 wherein the ~~queue~~ stream comprises a succession of sub-frames, each sub-frame comprising a header and a plurality of the payloads.

63. (Previously Presented) The method of claim 62 wherein each sub-frame is divided into the plurality of pieces capable of being independently retransmitted.

64. (Previously Presented) The method of claim 63 wherein division of a sub-frame into the plurality of pieces comprises dividing the sub-frame into the plurality of sub-blocks of equal size, and forming at least some pieces from a plurality of sub-blocks.

65. (Currently Amended) The method of claim 1 wherein ~~at least some of the low level data units contain~~ the boundary demarcation information for a given low level data unit comprises information that indicates whether a boundary between ~~high level data units~~ sub-frames exists within the low level data unit.

66. (Currently Amended) The method of claim 65 wherein, if such boundary does exist within the low level data unit, the ~~low level data unit~~ boundary demarcation information further comprises information that indicates where the boundary occurs within the low level data unit.

67. (Previously Presented) The method of claim 66 wherein the information that indicates whether a boundary between high level data units exists within the low level data unit comprises a field having a value that indicates which piece in the low level data unit includes the boundary, or having a value that indicates that no boundary exists within the low level data unit.

68. (Previously Presented) The method of claim 67 wherein the information that indicates where the boundary occurs within the low level data unit comprises an offset indicating a relative position of the boundary within the piece including the boundary.